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EXAMINER	
NGUYEN, LEON VIET Q	

ART UNIT	PAPER NUMBER
2611	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/822,829	LEVY, SHMUEL	
	Examiner	Art Unit	
	Leon-Viet Q. Nguyen	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 August 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-32* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-32* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 April 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to communication filed on 8/02/07. Claims 1-32 are pending on this application.

2. Applicant's amendment overcomes the following objection/rejection:

a. Rejection of claims 28-32 under 35 USC 101

b. Rejection of claims 1, 4, 6, 7, 9, 11, 13, 16, 17, 25, 26, 28, and 31 under 35 USC 102(b)

c. Rejection of claims 2, 3, 5, 8, 10, 12, 14, 15, 18-24, 27, 29, 30, and 32 under 35 USC 103(a)

Response to Arguments

3. Applicant's arguments with respect to claims 1-32 have been considered but are moot in view of the new ground(s) of rejection.

Response to Remarks

Regarding claim 1, applicant argues that Greenstein et al fails to disclose adaptively and separately selecting a coding mode of each orthogonal frequency division multiplexing sub-carrier symbol of a data stream in an orthogonal frequency division multiplexing channel according to a received channel state information that relates to the orthogonal frequency division multiplexing sub-carrier and wherein said

coding mode is selectable so that said sub-carrier is able to support the sensitivity required for transmitting in the selected mode (Remarks page 10).

Examiner agrees that Greenstein does not disclose wherein said coding mode is selectable so that said sub-carrier is able to support the sensitivity required for transmitting in the selected mode. However the argument is moot in view of the new grounds of rejection. Examiner disagrees that Greenstein does not disclose adaptively and separately selecting a coding mode of each orthogonal frequency division multiplexing sub-carrier symbol of a data stream in an orthogonal frequency division multiplexing channel according to a received channel state information that relates to the orthogonal frequency division multiplexing sub-carrier. It is well known that in OFDM data is encoded in a specific manner at the transmitter and then decoded at the receiver. The claim fails to limit the coding mode to any specific coding mode. Therefore having any coding mode would read on the claimed limitation. Furthermore, Greenstein discloses selecting one switch and deselecting the other switch in response to a feedback signal from the receiver (col. 5 lines 1-7). The feedback signal contains information about which channel is carrying a stronger pilot tone (col. 4 lines 53-59). This is interpreted to be channel state information.

Regarding the arguments to claims 4, 6, 7, 9, 11, 13, 16, 17, 25, 26, 28, and 31, see the response to the argument of claim 1.

Regarding claims 2, 3, 5, 8, 12, 14, 15, 18, 21, 23, 24, 27, 29, 30, and 32 applicant argues that the Greenstein fails to disclose all of the limitations of claim 1 and that the applicant's background cannot cure the deficiencies of Greenstein (Remarks page 11).

Examiner respectfully disagrees. As stated prior, Greenstein does disclose adaptively and separately selecting a coding mode of each orthogonal frequency division multiplexing sub-carrier symbol of a data stream in an orthogonal frequency division multiplexing channel according to a received channel state information that relates to the orthogonal frequency division multiplexing sub-carrier (see the response to the arguments of claim 1). Furthermore, the background of the applicant's specification discloses using a multiplexing MIMO system (¶0002) and that failure to multiplex may cause the entire symbol to be in error (¶0002). Therefore the combination of Greenstein's OFDM system with the multiplexing mode of the background would read on the claimed limitations.

Regarding claims 10 and 20, applicant argues that Wu et al is silent as to the claimed limitations and can not cute the deficiencies of Greenstein et al (Remarks page 12). Applicant also argues that Wu teaches away from the claimed limitation (Remarks page 12).

Examiner respectfully disagrees.

Wu teaches a controller which selects either time diversity or spatial multiplexing encoding for two groups of sub-carriers (col. 5 lines 30-38), which is selected to satisfy

quality of service (col. 5 lines 39-46). Although Wu does not explicitly call the controller a channel state analyzer as claimed, the functionality is the same. The claim fails to limit which coding mode is selected, only claiming to select the coding mode based on a quality indicator. Since Wu's controller also selects time diversity or spatial multiplexing encoding to satisfy a quality requirement, examiner asserts that the combination of Greenstein and Wu would have read on the claimed limitation. Furthermore, it would be necessary to have an indicator to determined if the quality of service is satisfied as taught in Wu.

Regarding claims 19 and 22, applicant argues that Grreenstein fails to disclose wherein said coding mode is selectable so that said sub-carrier is able to support the sensitivity required for transmitting in the selected mode.

Examiner agrees. However the argument is moot in view of the new grounds of rejection.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claim 1 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in

the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In claim 1, "separately selecting a coding mode" was not described in the original specification.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claim 1, 4, 6, 7, 9, 11, 13, 16, 17, 25, 26, 28, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greenstein et al (US6131016) in view of Dabak et al (US20040071118).

Re claim 1, Greenstein discloses a method comprising:

adaptively and separately selecting a coding mode of an orthogonal frequency division multiplexing sub-carrier symbol of a data stream in an orthogonal frequency division multiplexing channel (col. 3 lines 59-63, col. 4 line 63 – col. 5 line 1, it would be inherent to have a coding mode for the transmitted data) according to a received channel state information that relates to the orthogonal frequency division multiplexing sub-carrier (col. 4 lines 58-63).

Greenstein fails to teach wherein said coding mode is selectable so that said sub-carrier is able to support the sensitivity required for transmitting in the selected

mode. However Dabak teaches wherein a coding mode is selectable so that said sub-carrier is able to support the sensitivity required for transmitting in the selected mode (¶0032. It is well known in the art that OFDM signals are encoded at the transmitter. Furthermore no specific coding mode is claimed, so any coding mode can be interpreted as the coding mode. The signal gain being adjusted to adjust for any frequency sensitivity in a transmit antenna and fitting the data stream to any required spectral restrictions is interpreted as selecting a coding mode to support the required sensitivity).

Therefore taking the combined teachings of Greenstein with Dabak as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the method of Dabak into the method of Greenstein. The motivation to combine Dabak and Greenstein would be to improve spectral utilization and immunity to interference (¶0029).

Re claim 4, the modified invention of Greenstein teaches a method comprising:

adaptively grouping receivers according to a desired coding mode received with the received channel state information (col. 4 lines 31-34 and lines 58-63 of Greenstein. It would be inherent to group all the receivers if there is only a single coding mode).

Re claim 6, Greenstein teaches a method comprising:

coding symbols of a first subset of sub-carriers of an orthogonal frequency division multiplexing channel in a first mode (col. 3 lines 5-6 and 59-62 of Greenstein, the OFDM signal transmitted with the first pilot tone is interpreted to be in a first mode); and

coding symbols of a second subset of sub-carriers of an orthogonal frequency division multiplexing channel in a second mode (col. 3 lines 6-7 and 59-62 of Greenstein, the OFDM signal transmitted with the first pilot tone is interpreted to be in a second mode).

Greenstein fails to teach wherein said coding mode is selectable so that said sub-carrier is able to support the sensitivity required for transmitting in the selected mode. However Dabak teaches wherein a coding mode is selectable so that said sub-carrier is able to support the sensitivity required for transmitting in the selected mode (¶0032. It is well known in the art that OFDM signals are encoded at the transmitter. Furthermore no specific coding mode is claimed, so any coding mode can be interpreted as the coding mode. The signal gain being adjusted to adjust for any frequency sensitivity in a transmit antenna and fitting the data stream to any required spectral restrictions is interpreted as selecting a coding mode to support the required sensitivity).

Therefore taking the combined teachings of Greenstein with Dabak as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the method of Dabak into the method of Greenstein. The

motivation to combine Dabak and Greenstein would be to improve spectral utilization and immunity to interference (¶0029).

Re claim 7, the modified invention of Greenstein teaches a method comprising:

transmitting a first group of symbols of sub-carriers of an orthogonal frequency division multiplexing channel via a first antenna (transmission circuit 202 transmitting via antenna 15 in fig. 2A of Greenstein, col. 3 lines 59-62 of Greenstein); and

transmitting a second group of symbols of sub-carriers of an orthogonal frequency division multiplexing channel via a second antenna (transmission circuit 203 transmitting via antenna 16 in fig. 2A of Greenstein, col. 3 lines 59-62 of Greenstein).

Re claim 9, all of the claim limitations as recited have been analyzed and addressed in the above rejections with respect to claim 1. It would be obvious and necessary to have an apparatus to perform the method as claimed in claim 1.

Re claim 11, the modified invention of Greenstein teaches an apparatus comprising a multiple-in-multiple-out receivers transmitters system (fig. 1 of Greenstein, col. 4 lines 31-35 of Greenstein. The base station has multiple transmit antennas and the receiving terminal may have multiple receive antennas).

Re claim 13, the modified invention of Greenstein teaches an apparatus comprising:

a first transmitter to transmit the symbol (transmit antenna 15 in fig. 2A of Greenstein); and

a second transmitter (transmit antenna 16 in fig. 2A of Greenstein) to transmit a coded symbol that is coded according to one or more coding mode (it would be obvious and necessary to code a symbol to be transmitted in a receiver).

Re claim 16, all of the claim limitations as recited have been analyzed and addressed in the above rejections with respect to claim 1. It would be inherent to have an apparatus to perform the method as claimed in claim 1. Furthermore, the predetermined criterion is interpreted to be the same as the received channel state information in claim 1.

Re claim 17, all of the claim limitations as recited have been analyzed and addressed in the above rejections with respect to claim 7.

Re claim 25, all of the claim limitations as recited have been analyzed and addressed in the above rejections with respect to claim 16. It would be obvious and necessary to have a station including the coding mode selector as claimed in claim 16.

Re claim 26, all of the claim limitations as recited have been analyzed and addressed in the above rejections with respect to claim 17.

Re claim 28, all of the claim limitations as recited have been analyzed and addressed in the above rejections with respect to claim 1. It would be obvious and necessary to have a storage medium, having stored instructions thereon, which executes the method as claimed in claim 1.

Re claim 31, all of the claim limitations as recited have been analyzed and addressed in the above rejections with respect to claim 4.

8. Claims 2, 3, 5, 8, 12, 14, 15, 18, 21, 23, 24, 27, 29, 30, and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greenstein et al (US6131016) and Dabak et al (US20040071118) and further in view of the background of applicant's specification (hereby referred to as the background).

Re claim 2, the modified invention of Greenstein fails to teach a method comprising coding the data stream generated by a multiple-in multiple-out receivers-transmitters system in a multiplexing mode. However the background teaches a MIMO system including a multiplexing MIMO system (¶0002), which operates in a multiplexing mode.

Therefore taking the modified teachings of Greenstein and Dabak with the background as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the multiplexing MIMO system of the background into the method of Greenstein. The motivation to combine the background, Dabak and Greenstein would be to prevent the entire transmitted symbol from being in error (¶0003).

Re claim 3, the modified invention of Greenstein fails to teach a method comprising coding the data stream generated by a multiple-in multiple-out receivers-transmitters system in a diversity mode. However the background teaches a MIMO system including a diversity MIMO system (¶0002), which operates in a diversity mode.

Therefore taking the modified teachings of Greenstein and Dabak with the background as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the diversity MIMO system of the background into the method of Greenstein. The motivation to combine the background, Dabak and Greenstein would be to gain sensitivity by exploiting multi path propagation channel property (¶0002).

Re claim 5, the modified invention of Greenstein teaches a method comprising:

coding symbols of a first subset of sub-carriers of an orthogonal frequency division multiplexing channel (transmission circuit 202 in fig. 2A of Greenstein, col. 3 lines 5-6 and lines 59-62 of Greenstein); and

coding symbols of a second subset of sub-carriers of an orthogonal frequency division multiplexing channel (transmission circuit 203 in fig. 2A of Greenstein, col. 3 lines 6-7 and lines 59-62 of Greenstein).

Greenstein fails to teach wherein the first subset of sub-carriers is coded in a multiplexing mode and the second subset of sub-carriers is coded in a diversity mode. However, the background teaches the use of a diversity MIMO system or a multiplexing MIMO system (¶0002). One of ordinary skill in the art would have found it obvious to use each system in a MIMO system.

Therefore taking the modified teachings of Greenstein and Dabak with the background as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the diversity and multiplexing MIMO systems of the background into the method of Greenstein. The motivation to combine the background, Dabak and Greenstein would be to gain sensitivity by exploiting multi path propagation channel property (¶0002) and to prevent an entire transmitted symbol from being in error (¶0003).

Re claim 8, the modified invention of Greenstein teaches a method wherein transmitting the second group of symbols comprises: transmitting symbols of the first subset of sub-carriers of an orthogonal frequency division multiplexing channel (col. 3 lines 59-62 of Greenstein) and symbols of the second subset of sub-carriers of an orthogonal frequency division multiplexing channel (col. 59-62 of Greenstein).

Greenstein fails to teach wherein the first subset of sub-carriers is transmitted in a diversity mode and the second subset of sub-carriers is coded in a multiplexing mode. However, the background teaches the use of a diversity MIMO system or a multiplexing MIMO system (¶0002). One of ordinary skill in the art would have found it obvious to use each system in a MIMO system.

Therefore taking the modified teachings of Greenstein and Dabak with the background as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the diversity and multiplexing MIMO systems of the background into the method of Greenstein. The motivation to combine the background, Dabak and Greenstein would be to gain sensitivity by exploiting multi path propagation channel property (¶0002) and to prevent an entire transmitted symbol from being in error (¶0003).

Re claim 12, the modified invention of Greenstein fails to teach an apparatus wherein the coding mode comprises at least one of a diversity mode and a multiplexing mode. However the background teaches coding incoming bits in a diversity MIMO system (¶0002).

Therefore taking the modified teachings of Greenstein and Dabak with the background as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the diversity MIMO system of the background into the method of Greenstein. The motivation to combine the background,

Dabak and Greenstein would be to gain sensitivity by exploiting multi path propagation channel property (¶0002).

Re claim 14, the modified invention of Greenstein fails to teach an apparatus wherein the coded symbol is coded either in a diversity mode or in a multiplexing mode. However the background teaches coding incoming bits in adiversity MIMO system (¶0002).

Therefore taking the modified teachings of Greenstein and Dabak with the background as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the diversity MIMO system of the background into the method of Greenstein. The motivation to combine the background, Dabak and Greenstein would be to gain sensitivity by exploiting multi path propagation channel property (¶0002).

Re claim 15, the modified invention of Greenstein teaches an apparatus wherein the second transmitter is able to transmit two or more coded symbols (col. 3 lines 3-4 of Greenstein, all of the carrier tones is interpreted to be more than one of the coded symbols) but fails to teach wherein at least some of the coded symbols are coded according the diversity mode and at least some other coded symbols are coded according to multiplexing mode.

However the background teaches coding bits in a diversity MIMO system (¶0002) and suggests also coding at least some of the symbols in a multiplexing mode (¶0003).

Therefore taking the modified teachings of Greenstein and Dabak with the background as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the diversity and multiplexing coding of the background into the method of Greenstein. The motivation to combine the background, Dabak and Greenstein would be to gain sensitivity by exploiting multi path propagation channel property (¶0002) and to prevent an entire transmitted symbol from being in error (¶0003).

Re claim 18, all of the claim limitations as recited have been analyzed and addressed in the above rejections with respect to claim 8.

Re claim 21, all of the claim limitations as recited have been analyzed and addressed in the above rejections with respect to claim 12.

Re claim 23, all of the claim limitations as recited have been analyzed and addressed in the above rejections with respect to claim 14.

Re claim 24, all of the claim limitations as recited have been analyzed and addressed in the above rejections with respect to claim 15.

Re claim 27, all of the claim limitations as recited have been analyzed and addressed in the above rejections with respect to claim 18.

Re claim 29, all of the claim limitations as recited have been analyzed and addressed in the above rejections with respect to claim 2.

Re claim 30, all of the claim limitations as recited have been analyzed and addressed in the above rejections with respect to claim 3.

Re claim 32, all of the claim limitations as recited have been analyzed and addressed in the above rejections with respect to claim 5.

9. Claims 10 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greenstein et al (US6131016) and Dabak et al (US20040071118) and further in view of Wu et al (US6985434).

Re claim 10, the modified invention of Greenstein fails to teach an apparatus further comprising:

a channel state analyzer to select the coding mode based on a quality indicator of the orthogonal frequency division multiplexing sub-carrier.

However Wu teaches a controller which selects either time diversity of spatial multiplexing encoding for two groups of sub-carriers (col. 5 lines 30-38), which is selected to satisfy quality of service (col. 5 lines 39-46).

Therefore taking the modified teachings of Greenstein and Dabak with Wu as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the encoding mode selection of Wu into the apparatus of Greenstein. The motivation to combine Wu, Dabak and Greenstein would be maximize the throughput gain (col. 5 lines 46-47).

Re claim 20, all of the claim limitations as recited have been analyzed and addressed in the above rejections with respect to claim 10.

10. Claims 19 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Greenstein et al (US6131016).

Re claim 19, Greenstein teaches a wireless communication device comprising: a receiver transmitter system (fig. 2A) operably coupled to two or more dipole antennas wherein (fig. 2B, col. 4 lines 31-34), the multiple-in-multiple-out receivers transmitters system includes a transmitter system (transmission circuits 202 and 203 in fig. 2A) which includes a coding mode selector to select a coding mode of a symbol of an orthogonal frequency division multiplexing sub-carrier (col. 3 lines 59-63, col. 4 line 63 – col. 5 line 1) according to a received channel state information that related to the orthogonal frequency division multiplexing sub-carrier (col. 4 lines 58-63).

Greenstein fails to teach wherein the receiver transmitter system is a multiple-in multiple-out system. However Greenstein does suggest using multiple receive

antennas at the receiver (col. 4 lines 31-34). One of ordinary skill would have found it obvious to combine the receiver diversity (col. 4 lines 31-34) with the receiver transmitter base station (fig. 2A). The motivation to combine would be to further improve reception (col. 4 lines 31-34).

Greenstein also fails to teach wherein said coding mode is selectable so that said sub-carrier is able to support the sensitivity required for transmitting in the selected mode. However Dabak teaches wherein a coding mode is selectable so that said sub-carrier is able to support the sensitivity required for transmitting in the selected mode (¶0032. It is well known in the art that OFDM signals are encoded at the transmitter. Furthermore no specific coding mode is claimed, so any coding mode can be interpreted as the coding mode. The signal gain being adjusted to adjust for any frequency sensitivity in a transmit antenna and fitting the data stream to any required spectral restrictions is interpreted as selecting a coding mode to support the required sensitivity).

Therefore taking the combined teachings of Greenstein with Dabak as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the method of Dabak into the method of Greenstein. The motivation to combine Dabak and Greenstein would be to improve spectral utilization and immunity to interference (¶0029).

Re claim 22, all of the claim limitations as recited have been analyzed and addressed in the above rejections with respect to claim 13.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leon-Viet Q. Nguyen whose telephone number is 571-270-1185. The examiner can normally be reached on monday-friday, alternate friday off, 7:30AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David C. Payne can be reached on 571-272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Leon-Viet Nguyen/
Assistant Examiner Art Unit 2611

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SUPERVISORY PATENT EXAMINER